

AMSAT News Service Weekly Bulletins

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AMSAT NEWS SERVICE

ANS-060

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on <http://www.amsat.org> publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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SB SAT @ AMSAT \$ANS-060.01

ANS-060 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 060.01

>From AMSAT HQ KENSINGTON, MD.

DATE March 8, 2015

To All RADIO AMATEURS

BID: \$ANS-060.01

ISS SSTV in a Brazilian School

One of the members of the newly formed Brazil's AMSAT-BR group, Paulo, PV8DX, demonstrated amateur radio on Monday, February 23, 2015 at the Gonçalves Dias school when he demonstrated receiving an ISS SSTV picture on 145.800 MHz FM.

The ISS pass he received did not produce a strong signal and only part of the picture was captured but as can be seen from the video the students were enthusiastic and excited to be receiving a signal from space.

Paulo expressed the hope that the ISS will send images on school days more often.

AMSAT-BR

<https://sites.google.com/site/amsatbr/>

Information on receiving ISS SSTV

<http://amsat-uk.org/2015/02/11/more-iss-slow-scan-tv/>

[ANS thanks Paulo, PV8DX and AMSAT-BR for the above information]

Space Station SSTV and Packet Radio via SUWS WebSDR

Martin Ehrenfried G8JNJ reports excellent SSTV and Packet Radio signals from the International Space Station (ISS) using the online SUWS WebSDR.

The omni-direction helix antennas at the WebSDR were designed with high elevation satellites in mind. Conventional antennas concentrate the radiation pattern towards the horizon resulting in weaker signals when a satellite is above 15 degrees elevation. Comparisons with other WebSDRs show the SUWS antennas provide a 6 to 10dB better signal to noise ratio on similar passes.

Martin says: "I had been experimenting with single turn 'twisted halo' design, and decided to try stacking them to see if I could achieve more gain. Modelling suggested that a stretched 3 turn helix with a helix circumference of approx 1/2 wave length and an overall length of 1/2 wave at 70cm, and fed with a gamma match at the centre would offer reasonable gain, an omni-directional pattern and mixed polarisation."

You can use the free online SUWS Web Software Defined Radio from your PC or Laptop to receive the ISS and the many amateur radio satellites transmitting in the 144-146 MHz or 435-438 MHz bands. It also provides reception of High Altitude Balloons in the 434 MHz band and coverage of the microwave 10368-10370 MHz band.

The SUWS WebSDR is located at Farnham not far from London, 51.3 N 1.15 W, listen to it at <http://websdr.suws.org.uk/>

Full details of the antennas are available at <http://g8jnj.webs.com/currentprojects.htm>

[ANS thanks AMSAT-UK for the above information]

SSTV From the ISS Completed This Week

Following a short delay in amateur radio operations aboard the ISS due to schedule changes in EVA activity, the Slow Scan Television transmissions were sent on Sunday, Monday, and Tuesday, February 22-24. The transmissions originated from the Russian segment of the ISS using a modified Kenwood radio and an external antenna on the ISS. The callsign of RS0ISS was used.

SSTV signals received on 145.800 MHz using the PD180 high resolution mode featured 12 different photos of the first cosmonaut Yuri Gagarin. Also included was a photo of a commemorative diploma created by the National Polish Amateur Radio Society celebrating the 80th anniversary of Gagarin's birthday.

Images received by radio amateurs world-wide may be viewed on-line at:
http://www.spaceflightsoftware.com/ARISS_SSTV/

AMSAT-UK provides a good reference page to prepare amateur radio operators to set up their stations for future SSTV events from the ISS:
<http://amsat-uk.org/2015/02/11/more-iss-slow-scan-tv/>

Enthusiastic comments posted on amsat-bb indicated world-wide success:

Fer, IW1DTU wrote, "ISS SSTV, strong signal."

Roland, PY4ZBZ wrote, "Picture received in Brazil 22 feb 2015:
<http://www.qsl.net/py4zbz/satellite/Hist33.jpg>

Ken, GW1FKY commented, "Received very strong and clear pictures using my Kenwood THD-7 on a pass 1416 hrs plus, at my QTH in Wales UK. This was despite very heavy rain and severe flooding in the area.

Greg, K06TH wrote, "I've never received a clearer SSTV picture from anywhere, let alone outer space! Using a Yaesu FT-847 and MMSSTV software running under Wine on my OpenSuSE Linux box."

Steve, AI9IN wrote, "Just got a nice download of picture 12/12 Series 1 from ISS. Have a 5/8 wave vertical on the roof going to an old Yaesu 2 m multi-mode used MMSSTV. My first SSTV from the ISS!"

[ANS thanks ARISS for the above information]

CubeSats Offered Deep-Space Ride on ESA Asteroid Probe

Think of it as the ultimate hitchhiking opportunity: ESA is offering CubeSats a ride to a pair of asteroids in deep space. CubeSats are among the smallest types of satellites: formed in standard cubic units of 10 cm per side, they provide affordable access to space for small companies, research institutes and universities. One-, two- or three-unit CubeSats are already being flown.

Teams of researchers and companies from any ESA Member State are free to compete. The selected CubeSats will become Europe's first to travel beyond Earth orbit once the Asteroid Impact Mission (AIM) is launched in October 2020.

"AIM has room for a total of six CubeSat units," explains Ian Carnelli, managing the mission for ESA. "So potentially that might mean six

different one-unit CubeSats could fly, but in practice it might turn out that two three-unit CubeSats will be needed to produce meaningful scientific return.

"We're looking for innovative ideas for CubeSat-hosted sensors that will boost and complement AIM's own scientific return.

"We also intend to use these CubeSats, together with AIM itself and its asteroid lander, to test out intersatellite communications networking.

"ESA's SysNova initiative will be applied to survey a comparatively large number of alternative solutions, this competition framework giving industry and universities the opportunity to work together on developing their scientific investigations in a field that is the technological cutting edge."

Beginning its preliminary Phase-A/B design work next month, ESA's AIM spacecraft will be humanity's first mission to a binary system - the paired Didymos asteroids, which come a comparatively close 11 million km to Earth in 2022. The 800 m-diameter main body is orbited by a 170 m moon.

AIM will perform high-resolution visual, thermal and radar mapping of the moon. It will also put down a lander - ESA's first touchdown on a small body since Rosetta's Philae landed on a comet last November.

AIM also represents ESA's contribution to a larger international effort, the Asteroid Impact and Deflection Assessment (AIDA) mission.

The NASA-led Double Asteroid Redirection Test (DART) probe will impact the smaller body, while AIM will perform detailed before-and-after mapping, including pinpointing any shift in the asteroid's orbit.

"While it will return invaluable science," adds Ian, "AIM is conceived as a technology demonstration mission, testing out various technologies and techniques needed for deep space expeditions in future.

"These include two-way high-bandwidth optical communications - with data being returned via laser beam to ESA's station in Tenerife - as well as intersatellite links in deep space and low-gravity lander operations.

"Once demonstrated, these capabilities will be available to future deep-space endeavours, such as Lagrange-point observatories returning large amounts of data and sample return missions to Phobos - and ultimately Mars - as well as crewed missions far beyond Earth orbit."

The chance to put forward CubeSats is being organised as a SysNova competition, an initiative by ESA's General Studies Programme - which is running the AIM project - to compare innovative solutions to space mission challenges.

Interested teams can get more information from the published announcement of opportunity. As a next step, qualified teams can submit initial 'challenge responses' describing their proposed mission concepts and how they address the defined technical challenges associated with operating such small spacecraft close to an asteroid.

The winning submissions will then be funded by ESA for further study over the

next seven months, following up with a final review at ESA's ESTEC technical centre in Noordwijk, the Netherlands. The victors will then work with ESA to elaborate their designs, including sessions at ESTEC's Concurrent Design Facility.

http://www.spacedaily.com/reports/CubeSats_offered_deep_space_ride_on_ESA_asteroid_probe_999.html

[ANS thanks the Staff Writers at Spacedaily.com for the above information]

Live Broadcast of Space Launch System Booster Test Firing

Did you know that NASA is building the largest solid propellant rocket booster in the world? NASA will test this booster, designated Qualification Motor-1, or QM-1, on March 11, 2015, at the Orbital ATK test facility in Promontory, Utah. The test is scheduled for 11:30 a.m. EDT.

QM-1 is a five-segment solid propellant booster that will help power the Space Launch System. The two-minute, full-duration static test is a huge milestone for the SLS Program and will qualify the booster design for high-temperature conditions. This type of test typically comes only after multiple years of development and signifies major progress being made on the rocket. Once this test and a second, low-temperature test planned for early 2016 are complete, the hardware is qualified and ready for the first flight of SLS.

NASA's Space Launch System will be used to help send humans to deep space destinations like an asteroid and Mars. SLS is an advanced, heavy-lift launch vehicle that will provide an entirely new capability for science and human exploration beyond Earth's orbit. The SLS will give the nation a means to reach beyond our current limits and open new doors of discovery from the unique vantage point of space.

The test will be streamed at
<http://www.nasa.gov/multimedia/nasatv/index.html>
and broadcast on NASA TV.
Please make plans to watch with your students and colleagues.

To learn more about the Space Launch System, visit
<http://www.nasa.gov/exploration/systems/sls/>

[ANS thanks the NASA Education Express Message -- Feb. 26, 2015 for the above information]

ARISS SSTV Diploma Available

Radio amateurs from Poland created a diploma commemorating the SSTV activity from the International Space Station on the occasion of the 80th anniversary of Juri Gagarin's birthday. This homage to the first man in space coincides with the 85th anniversary of the Polish Amateur Radio Union (PZK), established

February 24th, 1930. A photo of the diploma is included in the series of pictures transmitted from the International Space Station.

If you wish to receive a printed version of the individual commemorative diploma with your name, surname and call sign, we cordially invite you to share your images received from the ISS. For this purpose please upload received images to the website

http://www.spaceflightsoftware.com/ARISS_SSTV/index.php

and e-mail a report to the coordinator (address e-mail is below) with your working conditions, equipment and antennas, used for reception of the signals from, the ISS. Please mention your first and last names, your call sign and your locator. Some published photos will possibly be used in the future for an educational purpose. If you publish pictures on the page above you agree with this.

From Polish stations we expect a complete audio record (containing the SSTV signal and the background noise as well) of the whole ISS pass over the station. It would be great to receive a similar report from all participants, but this is not required. However, if you decide to share audio, please put a time stamp at the end of the recording, with a precision up to 1 second, e g 23:51:54 UTC.

Reports are to be sent to [koordynator.ariss\(a\)gmail.com](mailto:koordynator.ariss(a)gmail.com). As subject please mention SSTV3ISS [YOUR CALLSIGN] [LOCATOR].

If you capture and post the picture of the Polish diploma, you can ask for a special QSL card commemorating the 85th anniversary of PZK. For this purpose, please send a separate request to [koordynator.ariss\(a\)gmail.com](mailto:koordynator.ariss(a)gmail.com). As subject please mention QSL1RS0ISS [YOUR CALLSIGN].

QSL cards and certificates will be sent via QSL bureau. If you wish to receive them via traditional mail or if you are not served by a QSL bureau, please send an empty self-addressed envelope and two IRC (international reply coupons) to:

Zespół Szkół Technicznych
ARISS
ul. Poznańska 43
63-400 Ostrow Wielkopolski
Poland

We are looking forward to your reports and requests until March 4th at 23:59 UTC.

[ANS thanks ARISS, and Jurek Jakubowski, SP7CBG, for the above information]

AMSAT at the Yuma Hamfest Wrapup Report

AMSAT Vice President for Field Operations, Patrick Stoddard, WD9EWK, writes a little about the two-day Yuma Hamfest that he attended with an AMSAT booth. "This hamfest has become (I think) the largest in Arizona, and I heard that over 1000 hams attended. It draws hams from all over Arizona, California, Nevada, and the "snowbirds" from other parts of the US and Canada. And a few hams came up from northern Mexico to join in the fun.

There was steady traffic past the AMSAT booth on both days. I had Rick, K7TEJ helping me for much of the weekend, and his help was appreciated very much. He left his homebrew dual-band Yagi (2 elements on 2m, 5 on 70cm) on a telescope mount and tripod at the AMSAT booth during the two days, along with my Elk 2m/70cm log periodic. Between the two of us, we had demonstrations on two AO-73 passes, two S0-50 passes, and one pass each on 3 other satellites (AO-7, FO-29, NO-44), with a total of 34 QSOs. Lots of flyers and the Getting Started with Amateur Satellites books were flying off the table, and we had good crowds for the demonstrations outside the main building on the Yuma County Fairgrounds. I posted pictures from the hamfest over the two days on my @WD9EWK Twitter feed. You are welcome to look through my feed and see those photos and other comments at:

<http://twitter.com/WD9EWK>

if you are not a Twitter user.

The S0-50 passes, as expected, were the busiest of the passes worked from Yuma. Much of the time, those passes were great illustrations of what can be heard on an FM satellite. Even some of the not-so-good operating examples made for excellent teaching moments.

I don't have any videos of the demonstrations this year, but have some videos of the aircraft flying into or out of Marine Corps Air Station Yuma, the airfield across the street from the hamfest site (the runways at that airfield are shared with Yuma International Airport, with both civilian and military aircraft coming and going throughout the day). Those videos, and others I have uploaded over the years, can be viewed at:

<http://www.youtube.com/va7ewk>

Thanks to everyone who worked WD9EWK during the hamfest. And a special thank-you for those who were standing by to work me, as I tried to complete QSOs with other stations that may have been closer to their LOS times than you. I have uploaded those QSOs to Logbook of the World. Please e-mail me directly (with QSO details) if you'd like to receive a WD9EWK QSL card to confirm those QSOs. You don't have to send me a card or SASE first. The hamfest was in grid DM22.

73!"

[ANS thanks Patrick, WD9EWK/VA7EWK for the above information]

Central States VHF Society Call for Papers

The Central States VHF Society is calling for the submission of papers,

presentations and posters for the upcoming 49th Annual Central States VHF Society Conference slated for July 23rd through the 26th in Denver, Colorado.

Suggested topics include but are not limited to antennas, propagation, satellites, test equipment, digital modes, contesting and the like. Non-weak signal topics, such as FM, Repeaters, packet radio and other utility communications modes are generally not considered acceptable, however, there are always exceptions. Please contact the Proceedings Chair John Maxwell if you have any questions about the suitability of a topic. His e-mail is w0vg(a)arrl.net .

Registration is online now at
www.csvhfs.org.

[ANS thanks the Central States VHF Society for the above information]

AMSAT Events

Information about AMSAT activities at other important events around the country. Examples of these events are radio club meetings where AMSAT Area Coordinators give presentations, demonstrations of working amateur satellites, and hamfests with an AMSAT presence (a table with AMSAT literature and merchandise, sometimes also with presentations, forums, and/or demonstrations).

*Saturday, 7 March 2015 – Irving Amateur Radio Club Hamfest in Irving TX (west of Dallas)

*Friday and Saturday, 13-14 March 2015 – Green Country Hamfest in Claremore OK (northeast of Tulsa)

*Saturday, 14 March 2015 – Science City 2015/Tucson Festival of Books in Tucson AZ (on the University of Arizona Main Mall)

* Saturday, 14 March 2015 0900 – 1630 – 2015 Palm Springs Hamfest at the Palm Springs Pavilion

*Friday and Saturday, 20-21 March 2015 – Acadiana Hamfest in Rayne LA (west of Lafayette)

*Saturday, 21 March 2015 – Weatherford Hamfest in Weatherford TX (west of Dallas/Fort Worth Metroplex)

*Saturday, 21 March 2015 – Scottsdale Amateur Radio Club Hamfest in Scottsdale AZ (northeast of Phoenix, near AZ-101/Princess Drive)

*Saturday, 28 March 2015 – Greater Houston Hamfest and 2015 ARRL Texas State Convention in Rosenberg TX (southwest of Houston)

*Saturday, 28 March 2015 – Tucson Spring Hamfest in Tucson AZ (22nd Street, east of Columbus Blvd.)

*Friday, 3 April 2015 – presentation for the Associated Radio Amateurs of Long Beach in Signal Hill CA (Signal Hill Community Center)

*Friday, 17 April 2015 – presentation for the Oro Valley Amateur Radio

Club in Tucson AZ

*Friday through Sunday, 1-3 May 2015 – ARRL Nevada State Convention in Reno NV (Boomtown Casino Hotel)

*Saturday, 2 May 2015 – Cochise Amateur Radio Association Hamfest in Sierra Vista AZ

*Thursday, 14 May 2015 – presentation for the Escondido Amateur Radio Society in Escondido CA

*Friday, Saturday, and Sunday, May 15-17 2015, Dayton Hamvention in Dayton OH (Hara Arena)

*Saturday, 6 June 2015 – White Mountain Hamfest in Show Low AZ

*Friday and Saturday, 12-13 June 2015 – HAM-COM in Irving TX (west of Dallas)

*Friday and Saturday, 7-8 August 2015 – Austin Summerfest in Austin TX

*Friday, Saturday, and Sunday, October 16-18 2015, AMSAT Symposium in Dayton OH (Dayton Crown Plaza)

[ANS thanks AMSAT-NA for the above information]

ARRISS News

* About Gagarin from space event school in Saint Petersburg, Russia, direct via RA1AJN

The ISS callsign is presently scheduled to be RSØISS

The scheduled astronaut is Anton Shkaplerov

Contact was successful 2015-02-26 12:27 UTC

* Riversink Elementary School, Crawfordville, FL, direct via K4WAK

The ISS callsign is presently scheduled to be NA1SS

The scheduled astronaut is Samantha Cristoforetti IZØUDF

Contact was successful: Thu 2015-02-26 15:15:56 UTC 77 deg

A report entitled "Thanks" was posted on the AMSAT-BB

"Just wanting to give a big 'Thank You' to this group....

I was approached by a local elementary school to host an ARISS Contact about

16 months ago.

For more than a year I have been pestering many of you (mostly off the reflector) for information to get a good grip on this facet of the hobby.

Yesterday I (with the assistance of a few from my radio club) conducted a great

contact.

As grateful as I am to the folks in the club for helping with the contact, many

of you here deserve just as much recognition.

Thank You!

..... Many of you dealt with '20 questions' about the smallest of details sometimes, and those little things made for a great one. As a result I have a

grandson that's 'on top of the world' and several club members with permanent

smiles..... And a very happy school full of kids & staff.

Thank You!

Doug
K4GKJ"

Upcoming ARISS Contact Schedule

* Direct contacts with students at G. Salvemini – G. La Pira, Montemurlo, Italy, direct via IQ5VR and at "Dante Alighieri" 1st Grade Secondary (Middle) School, Casale Monferrato, Italy, direct via IK1SLD The ISS callsign is presently scheduled to be IRØISS with astronaut is Samantha Cristoforetti IZØUDF are scheduled for Sat 2015-03-07 10:51:41 UTC 30 deg.

G. Salvemini – G. La Pira

"Salvemini – La Pira" is a secondary middle school located in Montemurlo, province of Prato, in the Tuscany region. The school has 21 classes with pupils ages 11 to 14 with a total of 520 pupils. The name of the school derives from the fusion of the two schools of the commune. This is the only secondary middle school in the area.

"Dante Alighieri"

The "Dante Alighieri" School is situated outside the town center of Casale Monferrato, near the ancient Cittadella, province of Alessandria, in the Piedmont region. It is a modern construction, developed on two main buildings:

one for the school's didactical and administrative activities, one for the sport activities (gym and pool). It is surrounded by a wide playground, with a

little plantation of poplars, planted by the pupils of the school. There are 12

classrooms (4 on the main floor and 8 on the first floor) and several labs, including a Science Lab, Informatics Lab, Techno Lab, Art Lab, Maths Lab, and a

Languages Lab, and a colorful and expansive library. There also a lot of afternoon activities, such as Latin courses, languages courses and sport tournaments (soccer, basket, volleyball). The Dante Secondary I grade School has a current roll of 230 students and a teaching staff of 29. In the last few

years the school has been enhanced by the richness of its diverse student population..

[ANS thanks ARISS, Charlie AJ9N and David AA4KN for the above information]

Satellite Shorts From All Over

S-band Moonbounce Update

The frequency and schedule has changed slightly..

As before, we're going to aim at Tycho from DSS-24 (34m antenna)

We'll radiate at 2115 MHz (not 2401 MHz).. from 0630UTC to 0900 UTC

For the first hour (until 0730UTC) we'll just have a CW carrier, should be easy to see.

For the next hour, we'll be transmitting a JPL ranging code with the chip rate at 2115/2048 MHz (a bit more than 1 MHz)..

See the 810-005 handbook for details

<http://deepspace.jpl.nasa.gov/dsndocs/810-005/214/214-1.pdf>

You can probably see not only the carrier but the +/-1 MHz ranging tones (and probably at +/-2 MHz, too), and also the PN sequence if you've got enough SNR (or post process.. the code period is about 1 second.. it's about a million chips long)

Then, at 0830UTC we'll stop using the PN ranging, and go to Doppler compensating the uplink so that the received signal at JPL will have zero Doppler.

This is all "we hope".. it's experimental and a sort of procedural shake out as well as giving me a chance to test my ground copy of a Software Defined Radio that is flying on ISS.

[ANS thanks Jim Lux, W6RMK for the above information]

/EX

In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
Joe Spier, K6WAO
k6wao at amsat dot org